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EXAMINER

WAMBACH, MARGARET R

ART UNIT

PAPER NUMBER

2816

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/697,743

Applicant(s)

KRANZ, MARK J.

Examiner

Margaret R Wambach

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 11 and 13-28 is/are rejected.
- 7) ☒ Claim(s) 9 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/30/03 & 3/22/04
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

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### ***Claim Objections***

Claims 4, 8, 19 and 23 are objected to because of the following informalities:

"Axis" should be corrected to state "axes" in claims 4 and 23, "a" should be inserted before "bandpass" in claim 8, "is" should be inserted after "interrogator" in claim 19, line 1, in claim 23, "a" should be deleted before "electrical". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16-20 and 22-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Clear antecedent basis is not present for "the microcontroller" in claim 16 and "the accelerometer signal" in claim 22.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-8, 11 and 21-24 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by EP 0517082 (hereafter "EP".)

As recited in claims 1 21 and 22 EP teaches a wheel-hub odometer and a method for counting wheel revolutions including attaching an electronic accelerometer to a wheel (on page 4 it states that the invention may be used to determine "the driving distance which has been traveled, and on page 6, the part of the vehicle to which the sensors are attached, "S" of Figure 1, is identified as a "disk" which is coupled to its driving mechanism or the chassis and which rotates when the vehicle moves and could be "the wheels, axles, and similar objects" – excluding the wheel rims, the wheel is formed of a hub) comprising an accelerometer (1 and 2 of Figure 1) comprising sensor means (1 and 2) wherein the sensor means are operable to sense a force (the four kinds of acceleration listed on page 7) acting thereon and generate an electrical signal representative of said force (on page 8, a signal is described which is the sum of "the mentioned four accelerations" and that signal is later filtered to free it from the vibrational component and otherwise processed) sensed by the sensor means, and wherein the signal is proportional to the number of wheel rotations of the wheel (the claim language is silent as to what *variable* property of the signal, such as its frequency, amplitude and/or phase, is proportional to the wheel rotations but EP meets this limitation by teaching that the number of positive or negative peaks of signal G shown in Figure 2 is proportional to the wheel rotations as also recited in claim 23 – "During each rotation... (g) acts upon the sensor (2), once positively and once negatively,... the

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electrical signal ...changes signs" (page 8.) Hence, if the electrical signal changes from positive to negative and vice versa once per rotation, a count of positive or negative peaks would render a count of wheel revolutions.) This signal representing the wheel count, after filtering and other processing, is sent to an output means which permits communication of the signal (transmitter 13 Figure 4) to a remote location as recited in claims 21 and 24.

With regard to claim 2, the accelerometer is "electronic" insofar as it produces an electronic signal G.

With regard to claims 3, 4 and 23, dual axes which are offset by 90 degrees are taught on page 8 –"detector (2) is offset in relation to the sensor (1) by a 90 degree angle".

With regard to claims 5, 21 and 22, Figures 4 and 6 show a control system with Figure 4 showing a sensor (2) providing its output to an electronic control system (the remaining elements) for interpreting the signal from the accelerometer, and calculating wheel rotations (counter 8 interprets the sensor signal after it is processed through filtering by counting pulses and producing a count output that represents a calculation of wheel rotations.)

With regard to claims 6 and 21, the electronic control system comprises a microcontroller (12) and a power source (26.)

With regard to claims 7 and 21, the electronic control system further comprises electronic filters (the filter system of Figure 4 in general including individual filters 3 and

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4, for instance) to attenuate irregularities (page 9 describes filtering out "a noise component."

With regard to claims 8 and 21, Figure 4 teaches an adapted filter wherein the adaptive frequency is calculated through the use of a digital phase locked loop (15-17) and the bandpass filter (4) attenuates irregularities in the accelerometer signal due to wheel impacts (page 7 states that the vibrational accelerational acceleration component is caused by "uneven road surfaces" which is equivalent to referencing the wheel impacts brought upon by bumps in the road and page 9 states that bandpass filter 4 contributes to freeing the sensor signal from the vibrational acceleration component.

With regard to claim 11, EP teaches that the odometer is coupled to a communication system (transmitter 13 and antenna 14 of Figure 4, for instance.)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0517082 (hereafter "EP") as applied to claims 1-8, 11 and 21-24 above, and further in view of Ko et al. (hereafter "Ko".)

The limitations of claim 5 from which claim 10 depends are anticipated by EP as discussed in the foregoing rejection. The difference between the limitations of claim 10 and the structure described by EP lies in the fact that EP does not explicitly disclose a

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display in communication with the electronic control system. Rather, EP only discloses on page 17 that data is "read-out" but does not describe how. This difference is taught in a similar environment by Ko. More specifically, in discussing prior art tire monitoring systems on column 2, lines 3-11, discusses a system wherein data transmitted to an RF receiver is then sent to a "display". To produce a structure having the limitations recited in claim 10, the counter of EP would have to be modified such that its counter data which is "read-out" via a display connected to its RF receiver as taught by Ko.

Motivation for this alteration is provided by the convenience of being able to visually access the data in a direct way.

Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0517082 (hereafter "EP") as applied to claims 1-8, 11 and 21-24 above, and further in view of Fleischer.

The limitations of claim 11 from which claim 13 depends are anticipated by EP as discussed in the foregoing rejection under 35 USC 102(b). The difference between the limitations of claim 13 and the structure described by EP lies in the fact that EP does not identify its communication system as an IR communication system. Claim 14 further limits claim 13 to require that the IR communications means is an infrared LED and photosensor coupled to the microcontroller. This difference is taught in a similar environment by Fleischer. More specifically, the abstract of Fleischer discloses an electronic hub odometer employing an IR (or infrared) communications means comprising an infrared LED and photosensor (or photo-optical detector). Further, Figure 4 of Fleischer teaches that the infrared LED and sensor (66 and 68) are coupled to a

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microcontroller (76.) To produce the structure recited in claims 13 and 14, EP must be modified to substitute its communication means for the communication means of Fleischer. Motivation for this substitution is provided by the low power consumption of infrared LEDs relative to higher frequency devices.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0517082 (hereafter "EP") to claims 1-8, 11 and 21-24 above, and further in view of Krystos.

The limitations of claim 11 from which claim 15 depends are anticipated by EP as discussed in the foregoing rejection under 35 USC 102(b). The difference between the limitations of claim 15 and the structure described by EP lies in the fact that EP does not identify its communication system as an RF communication system. This difference is taught in a similar environment by Krystos. More specifically, column 4, lines 5-7 suggest utilizing a radio frequency transmitter. To produce the structure recited in claims 13 and 14, EP must be modified to substitute the radio frequency transmitter suggested by Krystos for the unspecified system it uses instead. Motivation for this substitution is provided by the long distances that can be covered by radio transmissions.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0517082 (hereafter "EP") to claims 1-8, 11 and 21-24 above, and further in view of Zalud et al (hereafter "Zalud").

The limitations of claim 24 from which claim 25 depends are anticipated by EP as discussed in the foregoing rejection under 35 USC 102(b). The difference between the

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limitations of claim 25 and the structure described by EP lies in the fact that EP does not identify its means for communicating odometer data as an RF backscatter communication system. This difference is taught in a similar environment by Zalud. More specifically, Zalud teaches an odometer (column 3, lines 43-45) that communicates data through an RF backscatter communication system (column 7, lines 20-26.) To produce the structure recited in claims 13 and 14, EP must be modified to substitute the radio frequency transmitter suggested by Zalud for the unspecified system it uses instead. Motivation for this substitution is provided by the elimination of providing battery power for the entire transmission system.

Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0517082 (hereafter "EP") to claims above, and further in view of Breed et al (hereafter "Breed".)

The limitations of claim 24 from which claim 26 depends are anticipated by EP as discussed in the foregoing rejection under 35 USC 102(b). The difference between the limitations of claim 26 and the structure described by EP lies in the fact that EP does not state that its means for communicating odometer data is functionally connected to a network, and said odometer data is communicated to the network and available to a plurality of locations through said network. Further differences are recited in claim 27 which further requires that the network comprise a wireless network and claim 28 which requires that the network comprise the Internet. All of these differences are taught in a similar environment by Breed. More specifically, column 10, lines 37-41 place Breed in the environment of an odometer and column 7, lines 8-13 state that Breed may include

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"a cellular telephone, a satellite transmitter or a transmitter capable of sending information over the Internet". To produce the present invention, EP must be modified to utilize the wireless network connected to the internet taught by Breed. Motivation for this alteration is provided by the cost savings for sending data quickly to many locations without the expense of hard wiring the data to the Internet.

***Allowable Subject Matter***

Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 16-20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest incorporating power control means into the odometer taught by EP. Further, EP teaches against permitting instructions to be communicated to its odometer for fear of tampering.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret R Wambach whose telephone number is (571)272- 1756. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday 6am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on (571)272-1740. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Margaret R Wambach  
Primary Examiner  
Art Unit 2816

mrw